



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:

OSB2000-0014-FEC

OSB2000-0348-FEC

May 14, 2001

Mr. Don Ostby
Forest Supervisor
Umpqua National Forest
P.O. Box 1008
2900 Stewart Parkway
Roseburg, Oregon 97470

Mr. Cary Osterhaus
District Manager
Roseburg BLM District
777 NW Garden Valley Blvd.
Roseburg, Oregon 97470

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act
Essential Fish Habitat Consultation on the Quartz Creek Bridge Repair and the Upper and
Middle Smith River II Restoration and Rehabilitation

Dear Mr. Ostby and Mr. Osterhaus:

Enclosed is the National Marine Fisheries Service's (NMFS) biological opinion (Opinion) on several actions proposed by the Umpqua National Forest (UNF) and the Roseburg District of the Bureau of Land Management (BLM). These actions were proposed by the UNF in a letter and biological assessment dated January 14, 2000 and December 13, 2000. Actions proposed in these documents which were not likely to adversely affect Oregon Coast (OC) coho salmon have been addressed by the NMFS in previous correspondence. Additional actions that were included in the January letter were included in another biological opinion (October 16, 2000). This document also serves as consultation on Essential Fish Habitat (EFH) under Public Law 104-267, the Sustainable Fisheries Act of 1996, as it amended the Magnuson-Stevens Fishery Conservation Act. The description of actions and effects pertaining to ESA consultation is considered sufficient for EFH consultation.

The OC coho salmon evolutionarily significant unit (ESU) was listed by the NMFS as threatened under the Endangered Species Act (ESA) on August 10, 1998 (63 FR 42587). Critical habitat for this species was designated on February 16, 2000 (65 FR 7764). Although one letter addressed the effects of the proposed actions on Umpqua River cutthroat trout, this species was recently removed from the ESA list (65 FR 20915) and is not discussed in this Opinion.

NMFS concludes that the proposed actions are not likely to jeopardize OC coho salmon, or destroy or adversely modify this species' designated critical habitat. Pursuant to Section 7 of the

ESA, NMFS has included reasonable and prudent measures with non-discretionary terms and conditions that NMFS believes are necessary and appropriate to minimize the potential for take associated with these projects. NMFS also concludes these actions would adversely affect EFH for coho and chinook salmon, and appropriate conservation recommendations are provided.

If you have any questions, please contact Ken Phippen of my staff in the Oregon State Branch Office at 541.957.3385.

Sincerely,

Michael R Crouse

Donna Darm
Acting Regional Administrator

cc: Tom Mendenhall, Roseburg BLM
John Chatel, Umpqua NF

Endangered Species Act -Section 7 Consultation
&
Magnuson-Stevens Act
Essential Fish Habitat Consultation

BIOLOGICAL OPINION

Formal Section 7 Consultation on the Upper and Middle Smith River II Restoration and Rehabilitation Plan, Roseburg District, Bureau of Land Management and the Quartz Creek Bridge Repair project, Umpqua National Forest

Agency: Bureau of Land Management
Umpqua National Forest

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: May 14, 2001

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TABLE OF CONTENTS

1. ENDANGERED SPECIES ACT	<u>1</u>
1.1 Background	<u>1</u>
1.2 Proposed Actions	<u>2</u>
1.2.1 Upper Smith River II Restoration and Rehabilitation	<u>2</u>
1.2.2 Quartz Creek Bridge Repair	<u>3</u>
1.3 Biological Information and Critical Habitat	<u>3</u>
1.4 Evaluating Proposed Actions	<u>4</u>
1.4.1 Biological Requirements	<u>5</u>
1.4.2 Environmental Baseline	<u>6</u>
1.5 Analysis of Effects	<u>7</u>
1.5.1 Effects of Proposed Actions	<u>7</u>
1.5.1.1 Upper Smith River II Restoration and Rehabilitation	<u>8</u>
1.5.1.2 Quartz Creek Bridge Repair	<u>9</u>
1.5.1.3 Watershed-Level Effects	<u>11</u>
1.5.1.4 Effects on Critical Habitat	<u>12</u>
1.5.2 Cumulative Effects	<u>13</u>
1.6 Conclusion	<u>13</u>
1.7 Conservation Recommendations	<u>14</u>
1.8 Reinitiation of Consultation	<u>14</u>
2. INCIDENTAL TAKE STATEMENT	<u>14</u>
2.1 Amount or Extent of Take	<u>15</u>
2.2 Reasonable and Prudent Measures	<u>15</u>
2.3 Terms and Conditions	<u>16</u>
3. ESSENTIAL FISH HABITAT	<u>18</u>
3.1 Identification of Essential Fish Habitat	<u>19</u>
3.2 Effects of the Proposed Action	<u>19</u>
3.3 EFH Conservation Recommendations	<u>20</u>
3.4 Statutory Response Requirement	<u>20</u>
3.5 Consultation Renewal	<u>20</u>
4. LITERATURE CITED	<u>20</u>

1. ENDANGERED SPECIES ACT

1.1 Background

The Umpqua National Forest (UNF) submitted letters (January 14, 2000 and December 13, 2000) requesting consultation for proposed actions that were determined likely to adversely affect Oregon Coast (OC) coho salmon (*Oncorhynchus kisutch*) within the Umpqua River. These letters included projects proposed by the UNF and Bureau of Land Management (BLM), Roseburg District. Biological assessments (BAs) addressing the potential effects to these species accompanied the letters. The BAs describe the environmental baseline and effects of proposed actions on OC coho salmon and its critical habitat. This biological opinion (Opinion) analyzes the proposed actions described in the BAs. The proposed actions would have short-term adverse effects on OC coho salmon and its habitat, but are expected to provide long-term beneficial effects.

The UNF's proposed action (Quartz Creek Bridge Repair) was originally submitted to the Level 1 team for review in November of 1999. Emergency consultation was initiated by the Tiller Ranger District (UNF) on December 9, 1999, on a proposal to take immediate bridge protection action due to high flows and rains eroding a significant portion of the west bank and bridge approach fill under Forest Road 28 where it crosses Quartz Creek, a tributary to the South Umpqua River. After consultation with NMFS personnel, the UNF applied temporary risk-reduction measures to protect the bridge for the rest of the winter. The UNF concluded this work on December 17, 1999. While the emergency action was included in a June 7, 2000 letter of concurrence, the long-term solution to Quartz Creek bridge protection was not addressed at that time. The long-term resolution of the bridge and bank erosion problems are the subject of this UNF consultation. Formal consultation was also requested for the Upper Smith River II Restoration and Rehabilitation project, a long-term BLM project designed to improve riparian and aquatic conditions within the Upper Smith River, a tributary to the main Umpqua River.

The OC coho salmon evolutionarily significant unit (ESU) was listed by the National Marine Fisheries Service (NMFS) as threatened under the Endangered Species Act (ESA) on August 10, 1998 (63 FR 42587). Critical habitat for this species was designated on February 16, 2000 (65 FR 7764). Although the UNF's January letter also requested consultation on Umpqua River cutthroat, this species was removed from the ESA list (65 FR 20915) and is not discussed in this Opinion.

The BLM and UNF made the effects determinations in the BAs following procedures described by NMFS (NMFS 1996). The short-term effects of the actions proposed in the BA were evaluated by BLM and UNF biologists at the site scale using criteria based upon the biological requirements of OC coho salmon and other potentially affected anadromous salmonids. Compliance with the Aquatic Conservation Strategy (ACS) objectives of the Northwest Forest Plan (NFP) (USDA and USDI 1994) was also analyzed for those activities which would result in substantial effects to riparian or aquatic habitat. UNF and BLM biologists also evaluated the

likely effects of the proposed actions on the watershed scale, and in the long term, in the context of watershed processes. The Level 1 team for the Umpqua Basin has defined long-term effect for ESA consultation purposes as about a decade, while short-term effects would occur over a shorter duration, generally a few months to a few years. The Level 1 team for the Umpqua Basin and NMFS reviewed the BLM's effect determinations and documentation of ACS consistency for the subject actions at a meeting on November 15, 2000. The team concurred on the BLM's effect determinations and ACS consistency analyses. The Quartz Creek project (UNF) was submitted prior to the Basin Team establishment; therefore this project's determinations and documentation of ACS consistency for the subject actions was only reviewed by the UNF Level 1 team, the USFWS, and NMFS representative.

This document serves as NMFS's biological opinion for OC coho salmon. The objective of this Opinion is to determine whether the proposed actions are likely to jeopardize the continued existence of OC coho salmon or destroy or adversely modify designated critical habitat for OC coho salmon. This consultation is undertaken pursuant to section 7(a)(2) of the ESA and its implementing regulations, 50 CFR Part 402. This document will also serve as consultation under Section 305 of the Magnuson-Stevens Act.

1.2 Proposed Actions

The proposed actions analyzed in this Opinion are described in the Upper and Middle Smith River II Restoration and Rehabilitation Environmental Assessment (EA) and the Quartz Creek Bridge Repair EA and in attachments describing the actions further.

1.2.1 Upper Smith River II Restoration and Rehabilitation

The proposed project occurs within the Upper Smith River watershed, which is designated a Tier 1 Key watershed in the Northwest Forest Plan (NFP). The environmental assessment (EA) and other documentation were appended to the BLM's BA and have detailed information on the proposed actions, but a brief summary is provided below.

The proposed project would replace, rehabilitate, or restore culverts, roads, and stream habitat in the Upper and Middle Smith River subwatersheds (sixth field hydrologic units). Approximately 42 miles of road will have maintenance or improvement types of treatments, which include redesigning, installing, or maintaining drainage structures (drain dips, culverts and ditches) to reduce the sedimentation and hydrologic impacts resulting from diversion of subsurface flows by ditches; the addition of road surfacing material to reduce sedimentation; and the management of over-steepened road fill material to reduce the risk of landslides. Another 16 miles of road will be decommissioned through pulling culverts, pulling back sidecast material, subsoiling, planting with native species, and blocking vehicle access. Approximately 20 culverts would be replaced or removed to lower risks of failure, resulting in sediment loading, or provide fish passage where it is not currently available. In addition to the road work, 14 miles of streams are identified for in-stream large log placement. Another 28 miles of streams are identified for the felling or

pulling of trees into the streams. For two stream miles, a combination of felling, pulling, or log placement will occur. Approximately 40 stream miles are included in this stream restoration project. As part of this project, guidelines are developed for the use of anticipated future blow-down events that could be a source of large wood for prioritized stream reaches needing instream restoration work. The BLM has described project implementation with a five-year duration, therefore, this document considers the effects of this large wood collection for that period of time.

1.2.2 Quartz Creek Bridge Repair

The UNF proposes to repair the Quartz Creek bridge and construct a riprap structure to stabilize the upstream bank. This project occurs within the Upper South Umpqua fifth field watershed, which is a Tier 1 Key watershed. The proposal includes hardening approximately 55 feet of the west upstream bank with riprap. Excavation of a five-foot wide trench within the existing channel and bank is required to armor the channel bank and to key the riprap into the bank. An excavator will work primarily from a gravel bar within the active channel, but some work within the water will also be required. In addition to the riprap, the west approach to the bridge will also be repaired using the same equipment. This work requires removal of the existing asphalt surface and replacing material within the road bed and in the bridge abutment to stabilize the west approach. Asphalt resurfacing will be the final repair step. Approximately 75 cubic yards (cy) of riprap will be obtained from the Frack Quarry. This quarry is located outside of riparian reserves and no expansion of the quarry is expected. The haul route includes the Forest Service 27 and 28 roads.

1.3 Biological Information and Critical Habitat

The biological requirements, including the elements of critical habitat, of each of the ESUs are discussed in the LRMP/RMP Opinion (NMFS 1997) and in NMFS (1999). Environmental baseline conditions in the Umpqua Basin are discussed in Johnson *et al.* (1994), and pages 13-14 of the LRMP/RMP Opinion. These analyses are incorporated herein by this reference. Some additional general biological information is provided below.

The OC coho salmon is an anadromous species which generally has a three-year life cycle. OC coho salmon occur in the Upper South Umpqua and the Upper Smith River watersheds. Adult OC coho salmon spawn in the late fall and winter, with fry emergence occurring the following spring. Juvenile coho salmon rear for about a year in their natal streams and then outmigrate to the ocean as smolts in the spring. Some male coho return to freshwater to spawn the fall and winter of the same year as their smolt migration, but the majority of adult OC coho salmon do not return to spawn until after having spent roughly 18 months in the ocean. Thus, a typical OC coho salmon stream would likely be used year-round for rearing, feeding, spawning, or incubation habitat.

Quartz Creek is a major tributary of the South Umpqua River, within the Upper South Umpqua fifth field. Although the South Umpqua Falls occur on the South Umpqua River downstream of Quartz Creek, it is unlikely the falls are a barrier to OC coho salmon. Documentation of OC coho inhabiting Quartz Creek is lacking, with only one unsubstantiated juvenile sighting reported. UNF biologists assume coho could inhabit Quartz Creek up to an impassable waterfall located well upstream of the project site in Quartz Creek.

The Smith River drainage is a major tributary to the Umpqua River mainstem, with the lower reaches of the Smith River within the tidal influence zone. The action area is upstream of this tidal zone and includes the majority of the eastern portion of the headwaters of the Smith River. Based on the Smith River Watershed Analysis (1995) conducted by the BLM, it is apparent that OC coho inhabit the majority of the named streams within the Upper Smith River watershed. Many of the streams within the action area are considered OC coho critical habitat and the watershed is designated as Tier 1 Key watershed.

Although general information about the populations of anadromous fish within the Umpqua River basin is available (e.g., those streams likely inhabited), specific information on the size and health of anadromous fish populations in the basin is often lacking or incomplete. For example, the BLM's Smith River watershed analysis for the watershed at issue in this consultation generally did not provide specific information on fish population size, trends, or stream mileage inhabited by anadromous fish or resident fish, but often did document that scores of miles of habitat are available in each watershed for anadromous and resident salmonids. For the UNF's project, watershed analysis is incomplete, therefore, the analyses are dependent on the agency's project-level analysis. Because of the general paucity of the type of knowledge which would allow the UNF, BLM, and NMFS to assess the relative health of anadromous salmonid populations on a stream or watershed scale, and the fact that all fish species, populations, and individuals depend on adequate habitat, the NMFS primarily applies a habitat-based system in ESA consultation on land-management activities (NMFS 1999). The NMFS has applied the concept of properly functioning habitat condition to assess the quality of the habitat that fish need to survive and recover. This concept is discussed in the next section.

Site-level environmental baseline descriptions and effects determinations are typically made by UNF and BLM personnel for proposed actions. The baseline descriptions and effects determination are provided in the project-level Matrices of Pathways and Indicators (MPIs), which were included in the BAs. In addition, watershed-level information on anadromous salmonid habitat is provided in the fifth field MPIs included in the BAs. The NMFS concurred with these project and watershed-scale environmental baseline descriptions and effect determinations in the streamlined consultation process and considered them in addition to the broad-scale analysis conducted for the LRMP/RMP Opinion described above.

1.4 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA of the consultation regulations (50 CFR 402). The NMFS (1999) describes how the agency applies the ESA jeopardy and destruction/adverse modification of critical habitat standards to Section 7 consultations, including those for Federal land management actions in the Umpqua River basin. While land management actions typically have the potential to modify salmonid habitat, some actions also have the potential to affect the behavior and/or survival of individual salmonids apart from effects on habitat. Such actions can adversely affect individual fish through harassment or direct contact by people or their equipment.

As described in NMFS (1999), the first steps in applying the ESA jeopardy standards for habitat are to define the biological requirements of ESA-listed species and to describe the species' current status as reflected by the environmental baseline. In the next steps, NMFS' jeopardy analysis considers how proposed actions are expected to directly and indirectly affect specific environmental factors that define properly functioning aquatic habitat essential for the survival and recovery of the species. This analysis is set within the dual context of the species' biological requirements and the existing conditions under the environmental baseline (defined in NMFS 1999). An analysis of more direct (*i.e.*, non-habitat) effects on individuals of the species of interest is also made. The jeopardy analysis takes into consideration an overall picture of the beneficial and detrimental activities taking place within the action area, which is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). If the net effect of the activities is found to jeopardize the listed species, then NMFS must identify any reasonable and prudent alternatives to the proposed action.

1.4.1 Biological Requirements

For this consultation, NMFS finds that the biological requirements of OC coho salmon are best expressed in terms of current population status and environmental factors that define properly functioning freshwater aquatic habitat necessary for survival and recovery of the species. The NMFS defines this "properly functioning" condition as the state in which all of the individual habitat factors operate together to provide a healthy aquatic ecosystem that meets the biological requirements of the fish species of interest. Individual, measurable habitat factors (or indicators) have been identified (e.g., water temperature, substrate), and the properly functioning values for these indicators have been determined, using the best information available. These indicators, when considered together, provide a summary of the conditions necessary to ensure the long-term survival of aquatic species.

The NMFS has assembled a set of these indicators in a form called the Matrix of Pathways and Indicators (MPI) (NMFS 1996 and 1999). The MPI is a table that lists several categories or *pathways* of essential salmonid habitat, such as water quality, instream habitat elements, and flow/hydrology. Under these pathways are quantitative habitat indicators for which ranges of values are identified that correspond to a *properly functioning* condition, an *at risk* condition, and a *not properly functioning* condition. Because these habitat measurements are more readily

available than quantitative measurements of biological variables such as incubation success, standing crop, and growth rate, NMFS, BLM, and the UNF are able to assess the health of stream reaches or watersheds based on the condition of their component indicators. Such an assessment provides a baseline description of the health of the stream/watershed, and also allows the effects of an action (e.g., a culvert replacement) on the watershed to be evaluated.

Properly functioning watersheds, where all of the individual factors operate together to provide healthy aquatic ecosystems, are necessary for the survival and recovery of the listed species. It follows, then, that NMFS has determined that an action which would cause the habitat indicators of a watershed to move to a degraded condition, or one which significantly degrades a not properly functioning watershed, is also likely to jeopardize the continued existence of the listed species.

In addition to the use of the MPI at the watershed level to assist in making jeopardy determinations in Section 7 consultations, the NMFS also uses the MPI at the site or project scale. Assuming that a Federal agency determines that an action is a *may affect*, either informal or formal consultation is required. To assist in this determination, the action agency prepares a project-level MPI. If no *degrades* occur at this scale, then the action is probably not likely to adversely affect individuals of a listed species, and an informal Section 7 consultation is appropriate. If the proposed action degrades any of the indicators at this smaller scale (often the sixth or seventh field Hydrologic Unit Code [HUC]), then the action is generally considered to be a *likely to adversely affect*, and formal consultation must occur.

1.4.2 Environmental Baseline

NMFS described the current population status of OC coho salmon in a status review (Weitkamp *et al.* 1995), and in the final listing rule (August 10, 1998, 63 FR 42587). Critical habitat for this ESU was designated and described on February 16, 2000 (65 FR 7764).

As noted above, the action area includes all areas directly or indirectly affected by the proposed action. The general action areas for this Opinion can be defined as the two watersheds in which the proposed actions would occur (Upper South Umpqua River, Upper Smith River).

OC coho salmon use the action areas as rearing, feeding, spawning, and incubation habitat, and as a migration corridor. The environmental baseline of the action areas are dominated by conditions rated largely as not properly functioning or at risk (see watershed MPIs in BAs). These conditions are likely primarily the result of past forest management and agricultural practices, in particular, timber harvest/clearing within riparian zones, large-scale clear-cut timber harvest, road construction (especially within riparian zones), and timber yarding in riparian zones and streams.

Indicators particularly at issue in this consultation are those which would potentially be degraded by the proposed actions at the project scale, although the NMFS has also reviewed the UNF's

and BLM's *maintain* and *restore* effects descriptions. For the projects reviewed in this Opinion, the *sediment/turbidity* and *substrate* indicators have the potential to be degraded in the short term. The *chemical contaminant* indicator also has the potential to be degraded at the project scale for one proposed project. For the Quartz Creek bridge repair, the UNF indicated the risk potential for a short-term increase (degrade) from chemical contaminants due to use of equipment within the active stream channel, but NMFS expects implementation of the agency's project design features (PDFs) reduces the actual risk of this occurring to a negligible level.

Based on the best information available on the current status of OC coho salmon (NMFS assumptions based on the information available regarding population status, population trends and genetics, and the relatively poor environmental baseline conditions within the action areas (see MPIs in BAs and the OC coho salmon final listing rule)), NMFS finds that the environmental baseline does not currently meet all of the biological requirements for the survival and recovery of the listed species within the action area. Actions that do not retard attainment of properly functioning aquatic conditions, when added to the environmental baseline, are necessary to meet the needs of the species for survival and recovery.

1.5 Analysis of Effects

The effects determinations in this Opinion were made using a method for evaluating current aquatic conditions (the environmental baseline) and predicting the effects of the actions on them. This process is described in NMFS (1996) and NMFS (1999). This assessment method, in which MPIs are assembled by action agency biologists, was designed for the purpose of providing information in a tabular form for NMFS to determine the effects of actions subject to consultation.

The BLM and UNF use the MPI to make project-level effects determinations on actions which have the potential to modify salmonid habitat, that is, to determine whether an action is NLAA or LAA the ESA-listed species. If any indicator is thought to be degraded at the project level by the action, the action is determined LAA. In addition, if harassment or other forms of non-habitat related adverse effects are more than negligibly likely to occur due to the proposed actions, the UNF and BLM notes the type, duration, and likely severity of such effects in the BAs. The NMFS must then determine whether the species can be expected to survive with an adequate potential for recovery under the effects of the proposed action, the effects of the environmental baseline and any cumulative effects.

1.5.1 Effects of Proposed Actions

The UNF and BLM provided MPIs that document the effects of actions on aquatic habitat factors in the project area for a subwatershed (or other project-level spatial scale). These effects are expressed in terms of how they may restore, maintain, or degrade specific watershed indicators or pathways described in the MPIs. Some of the project-level MPIs represent more than one subwatershed, but still represent the effects of the action in those subwatersheds at the site scale.

The results of the completed checklist for the proposed action provides a basis for determining the effects of the action on the environmental baseline in the project area.

1.5.1.1 Upper Smith River II Restoration and Rehabilitation

Implementing the proposed restoration and rehabilitation actions described by the BLM in the Upper Smith River watershed poses a short-term risk to OC coho salmon. Project implementation is expected to occur over a five year period. Road treatments, such as maintenance, culvert replacements, and decommissioning, increase the short-term risk of effects from fine sediment. In addition to the road treatments, the placement of large woody debris (LWD) into streams also increases the short-term potential for fine sediment. PDFs provided by BLM are intended to minimize the amount of fine sediment generated and transported from the work site. PDFs include:

1. Limiting equipment access in the streams and riparian areas to the driest portion of the season between July 1st and September 15th.
2. Confining equipment to designated skid trails as identified in an approved plan.
3. Primarily using existing trails.
4. Limiting new trails to slopes less than 35 percent.
5. Mulching and revegetating access points.
6. Using the Oregon Plan (OWEB 1999) and Oregon Department of Fish and Wildlife (ODFW 1995) guidelines for instream work and habitat restoration.

The BLM biologists provided a detailed assessment of the likely sources and estimated quantities of sediment due to the actions proposed. The single largest source of sediment identified is the instream wood placement, specifically the placement of trees into the channel and subsequent channel response. BLM estimated five cubic yards (cy) of bank sediment per tree placement would be displaced and enter the stream's sediment load. This sediment is presumed to reflect normal sediment types, sizes and quantities associated with natural stream channel dynamics. With a target estimate of 50 trees per mile this sediment increase is calculated to be approximately 10,000 cy. The sediment storage capability of the installed wood into the channel as well as variable routing rates due to different sediment sizes will distribute this sediment along the stream system. The five year implementation will also provide a varied sediment delivery rate. Although there are a variety of project related mechanisms for fine sediment increases to affect OC coho, the long-term balance between the initial sediment increases and the benefits from replacing failing culverts, maintaining or eliminating road surfaces, and increasing the LWD - with all of its ecologically important functions - result in a long-term decrease in fine sediment. The NMFS agrees with the BLM that the potential for project caused increases in fine sediment to affect OC coho is more than negligible, but the long-term benefits of reducing roads, improving fish passage, and replacing LWD into the stream is a net benefit to the Upper and Middle Smith River subwatersheds.

The BLM also identified the danger of spills during machinery refueling and other petroleum products as a potential adverse effect. PDFs proposed by BLM include storing fuel in durable containers, in locations where spills could be contained, and inspecting the equipment for leaks prior to working in the area.

A third potential adverse effect is direct physical injury from machinery or tree placement. Driving equipment into the water or felling trees has the potential to injure young coho. BLM biologists considered the probability of a fish being crushed by heavy equipment or falling logs as low due to PDFs and the implementation following Oregon Plan (OWEB 1999) and Oregon Department of Fish and Wildlife (ODFW 1995) guidelines for instream work and habitat restoration. Temporary displacement of fish is possible but is not considered a significant detrimental effect.

Large-scale active restoration projects such as this proposed project include inherent risks for salmonids, but NMFS believes these risks are short-term in nature with long-term beneficial effects. Many streams in the Pacific Northwest are modified from past human activities. Actions such as stream cleanout, riparian timber harvest, and valley bottom road construction reduced the amount of large wood in the streams. The effects of large wood removal from Pacific Northwest streams on aquatic ecosystems and the salmonids at risk is well documented (Bisson et al. 1987; USDA and USDI (FEMAT) 1993; Bilby and Bisson 1998). The NMFS expects the riparian reserves of the NFP to provide a long-term solution to stream habitat recovery. In the short term, some active restoration, such as that proposed by BLM, will provide a good start to restoring natural function to the system.

Road treatments and the resulting effects and benefits from them vary by road and treatment type. Short-term effects due to decommissioning, culvert replacement, and maintenance each pose a different intensity of effect, but the balance of immediate sediment increase to long-term reduction of chronic sediment sources is considered beneficial to OC coho and the aquatic ecosystem. Replacement of fish passage blocking culverts also results in an initial fine sediment increase but the long-term benefits of increasing access to habitat is considered beneficial.

1.5.1.2 Quartz Creek Bridge Repair

Repair of the Quartz Creek Bridge may adversely affect OC coho salmon. These include both direct and indirect effects due to the use of mechanized equipment within the stream channel and the long term alteration of riparian habitat. The UNF proposes to implement the following PDFs in order to minimize short-term effects:

1. All instream work will be conducted during the instream work period of July 1 through September 15.
2. Sediment generating activities are limited to “dry season”, typically May 15 to October 15.

3. Sediment erosion control methods will be used for all sediment generating activities (revegetation with native seed, silt fences, rip rap, hay bales, and contouring of over steepened slopes).
4. Stream flows will be maintained during construction by rerouting (coffer dam construction and diverting flows) around the construction site.
5. A day prior to instream work, district fish biologists will survey the work site by snorkeling to determine the presence of fish. An attempt will be made to drive the fish upstream of the work site. If necessary and feasible, a seine will also be used as a method to drive the fish upstream. Block nets above and below the site will be used to prevent fish from entering the work site while the diversion around the site is constructed.
6. While equipment is in the stream, a sorbent boom will be installed within Quartz Creek downstream of the project site.
7. Traffic control devices, such as signs, will be used during implementation.
8. Hazardous materials will be stored away from the streamside, control measures will be available on site. A spill prevention and containment plan will be developed that addresses safe operation of vehicles near riparian areas, control runoff from work and staging areas, provide staging areas away from streams, require contractors to possess cleanup and control materials on site, and require the Tiller Ranger District's hazardous materials control plan on site to facilitate response.
9. Heavy equipment will be cleaned of mud, noxious plant seed, and other organic material, and inspected prior to moving onto the Tiller Ranger District.
10. Native grasses, forbs, vine maple, and Douglas fir will be used to revegetate work areas.

By implementing actions that isolate the work site from the stream's flow (PDF 4), turbidity and sedimentation will be reduced, thus minimizing potential downstream effects to OC coho. Fine sediment, whether suspended or bedload, may have direct or indirect effects on a variety of OC coho life stages. Implementing PDF 1 - 4 minimizes fine sediment, which will reduce the risk of incidental take of juvenile coho and effects on other aquatic organisms and coho critical habitat. The NMFS concurs with the UNF that this risk is more than negligible but expects the scope of the risk to be limited spatially and temporally to the immediate site and for a short time (less than a week).

Implementing PDF 1 and 5 will facilitate removal of juvenile OC coho from the work area. There is an inherent risk to juvenile coho when mechanized equipment is used in the stream and there is uncertainty about whether fish are present in the work site. Risk arises from potential excavator crushing or bucket interaction. In addition, as a result of on-site risk and downstream poor water quality, the UNF proposes to drive any fish present at the work site to a point above the work site in Quartz Creek, and holding them there with barrier nets. Removal of fish from the work site eliminates much of the risk, but also creates risk by potentially displacing the fish into poorly suited habitats. This may include poor water quality, such as high water temperatures in the South Umpqua River, or poor cover. In addition to habitat issues, interaction with removal gear (seine, handling, etc.) creates risk. Upstream movement of fish from the South Umpqua

River into Quartz Creek and the work site will also be blocked. This should not be a significant problem as the fish will likely have moved into Quartz Creek prior to the work.

Placing an excavator into the stream channel increases the risk of contamination from petroleum products. The UNF proposes PDFs 6 - 8 to minimize adverse effects. PDFs are designed to eliminate the obvious contaminants existing on the outside of the machinery, provide guidance for practices such as refueling and storage of materials, and provide control mechanisms to respond to accidents. Fuel or hydraulic line failure may be the most significant source of contamination. This risk cannot be completely eliminated, but can be reduced by placing the sorbent boom(s) downstream of the project site.

The placement of hardened structures, such as riprap, may result in some impairment of stream channel processes and fish habitat values (Beamer and Henderson 1998; Peters et al. 1998). The UNF described the site-level channel processes and documented the concern for the bridge abutment. Although the road, bridge and approach are counter to natural channel processes, PDF 10 provides mitigation by establishing native riparian and other vegetation in the stream bank. This will provide increased cover and bank protection in excess of that currently present. Establishing vine maple along the stream bank can result in overhanging vegetation that makes ideal cover, provides a nutrient source, and increases bank stability. Establishment of vegetation within the work area is critical to increasing riparian ecosystem values for achieving long-term site potential.

1.5.1.3 Watershed-Level Effects

In the BAs, the UNF and BLM provided watershed-scale MPIs and ACS consistency reviews for the Upper South Umpqua and the Upper Smith River watersheds that evaluated the proposed actions. The watershed-scale MPIs evaluate the effects of the proposed action on habitat indicators in the fifth field HUCs relative to the long-term environmental baseline. While many actions, including those that may be beneficial in the long term, have short-term, small-scale adverse effects, only those actions with adverse effects which are significant at the watershed scale over a long period would receive a *degrade* checkmark. The ACS consistency reviews included a description of how the proposed projects compared to the applicable NFP standards and guidelines (S&Gs) for the listed ESUs and found that the proposed projects complied with the nine ACS objectives for those ESUs. In the description below, only those MPI habitat indicators which were determined to degrade at the project scale are discussed.

As noted above under Project-Level Effects, only a few components of the proposed activities were thought to be likely to cause project or site-level MPI indicator *degrades*. The NMFS believes that the use of the *degrade* checkmark for *sediment/turbidity* and *substrate* for the road-related actions (projects) that would occur in and near non-fish bearing stream reaches is a conservative finding in that most of the sediment mobilized will not be transmitted to salmonid habitat. In the situations in which any sediment would be transmitted and/or suspended in fish-bearing streams due to these activities, the BLM believes, and the NMFS concurs, that these

effects would likely be localized and of short duration. The NMFS believes that in the long term, and on the watershed scale, any *degrades* for the proposed activities would be inconsequential, because the relatively small amount of sediment that is likely to enter watercourses as a result of the proposed activities would likely be indistinguishable from background natural sedimentation and sedimentation from previous human activities.

Proper road drainage upgrades, culvert replacements, etc., are likely to diminish the potential adverse effects of roads, including turbidity, sedimentation, and channel extension, by allowing the drainage design features to work properly and erosion to be minimized. Road obliteration and decommissioning should be even more beneficial than road and culvert upgrades in that all or nearly all of the hydrologic and sediment regime effects of the roads would be removed.

Similarly, because properly designed instream habitat projects are likely to improve aquatic habitat in the long term, the *sediment/turbidity* indicator that was marked as degraded by the BLM for the Smith River project should be of little consequence in the long term, and should lessen the effects of future sedimentation from natural and human-induced sources. This is partly because the presence of LWD should alter stream hydraulics in a manner that would allow for the retention and distribution of substrate; that is, the bedrock channels will once again store a variety of substrate sizes, including suitable spawning gravels. The hardening of the streambank to protect the Quartz Creek bridge will have a site-level influence on riparian habitat and stream channel function but will not negatively influence these parameters at the watershed scale.

Based on S&G discussions and the ACS objective consistency reviews in the BAs for the proposed actions, all relevant S&Gs and all ACS objectives will be complied with by the UNF and BLM. In particular, all riparian reserve S&Gs are satisfied for the repair and bank stabilization associated with the Quartz Creek bridge repair, the road treatments such as maintenance, improvement, culvert replacement, and decommissioning, as well as the instream improvements that include tree felling or pulling from riparian reserves or log placement. Compliance with the fifth ACS objective, “maintain and restore the sediment regime...” is discussed in the previous paragraphs, while the remainder of the ACS objectives are not likely to be adversely affected by the proposed actions. The UNF and BLM have also described in detail how the proposed activities are consistent with watershed analysis recommendations, direction for key watersheds, and watershed restoration planning. Within their ACS assessment, the UNF described the relation between their proposed action and the long-term management of the Upper South Umpqua watershed. Although the UNF lacks a watershed analysis for this watershed, UNF believes repair of this bridge will not limit the watershed restoration opportunities in this key watershed. The NMFS concurs with the UNF’s and BLM’s interpretation of the ACS guidelines.

1.5.1.4 Effects on Critical Habitat

NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water

quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Effects to relevant essential features of critical habitat from these proposed actions are addressed in the effects description expressed above.

1.5.2 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as those effects of “future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation.” Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities will be reviewed through separate section 7 consultation processes. Therefore, future federal actions are not considered cumulative to the proposed action.

The NMFS is not aware of any information regarding future state or private activities that would contribute to cumulative effects. The Upper South Umpqua watershed is almost entirely owned by the UNF (99.8 percent), therefore almost all future actions will be Federal actions. Substantial portions of the Upper Smith River watershed discussed in this Opinion is privately owned. The NMFS assumes that the cumulative effects of non-Federal land management practices will continue at similar intensities as in recent years (LRMP/RMP Opinion, pages 41-42).

1.6 Conclusion

The analysis in the preceding sections of this biological opinion forms the basis for conclusions about whether the proposed actions, the Quartz Creek Bridge Repair and the Upper and Middle Smith River II Restoration and Rehabilitation Projects, will satisfy the standards of ESA Section 7(a)(2). To do so, UNF and BLM must ensure that the proposed actions are not likely to jeopardize the continued existence of any listed species or destroy or adversely modify the designated critical habitat of such species.

After reviewing the current status of OC coho salmon considered in this opinion and the factors for their decline, the environmental baseline in the action area, the effects of the proposed action (particularly those described in Section 1.5.1), and cumulative effects, NMFS concludes that the Quartz Creek Bridge Repair and the Upper and Middle Smith River II Restoration and Rehabilitation Projects, as proposed, are not likely to jeopardize the continued existence of OC coho salmon.

The NMFS reached this conclusion based on the following considerations: 1) These actions will help attain ACS objectives at the watershed scale; 2) watershed habitat indicators will be maintained or restored over the long term; 3) erosion control measures will minimize short-term sedimentation and reduce the long-term sediment load; 4) bank stability, riparian vegetation, hydrologic function, and upstream passage will be improved in the action area; and 5) any adverse effects are likely to be small, local and of short duration.

1.7 Conservation Recommendations

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information.

PDFs incorporated into these projects provide substantial risk reduction for project activities adversely affecting OC coho salmon. One additional consideration the NMFS would recommend is the use of biodegradable hydraulic fluid in machinery used within the channel. Mechanized equipment requiring hydraulic capabilities poses a risk to the environment due to the potential for hydraulic line failure and subsequent environmental contamination. Hydraulic line failure results in a very rapid expulsion of fluid directly into the environment, which is of greatest concern when the equipment is positioned in the water.

In order for NMFS to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the NMFS requests notification of the implementation of any conservation recommendations.

1.8 Reinitiation of Consultation

Reinitiation of consultation is required if: (1) The action is modified in a way that causes an effect on the listed species that was not previously considered in the biological assessment and this Opinion; (2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may be affected by the action (50 C.F.R. 402.16).

2. INCIDENTAL TAKE STATEMENT

Harassment of individual OC coho salmon resulting from activities within and adjacent to stream channels, possible short term and transient increases in turbidity and sedimentation, and the spilling of hydraulic or other petroleum products due to an accident are expected to be the only sources of incidental take associated with the proposed actions covered by this Opinion. Because of the implementation of appropriate mitigation measures, PDFs, and best management practices (BMPs) for the proposed ground-disturbing activities, sediment impacts are expected to be minimized. Harassment of individual OC coho salmon is expected to be brief and minor, and would also be minimized by the use of appropriate mitigation measures, BMPs, and the reasonable and prudent measures listed below. The NMFS expects that the incidental take associated with the other effects of the proposed actions will also be minimal or non-existent.

2.1 Amount or Extent of Take

Adverse effects of management actions such as these are largely unquantifiable in the short term, and may not be measurable as long-term effects on the species' habitat or population levels. Therefore, even though the NMFS expects some low level of incidental take to occur due to these actions, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species themselves. The adverse effects of the actions, however, should be confined to the sub-watersheds in which the actions are proposed to occur.

2.2 Reasonable and Prudent Measures

The incidental take statement in the LRMP/RMP Opinion provided reasonable and prudent measures and terms and conditions to avoid or minimize the take of listed salmonids from actions which would be beneficial in the long term (pages 64-65 and 70) that may be applied to site specific actions if appropriate. NMFS hereby applies the findings, reasonable and prudent measures (RPM), and terms and conditions set forth in the Incidental Take Statement of the programmatic LRMP/RMP Opinion to the site specific proposed actions, and authorizes such minimal incidental take, provided the UNF and BLM complies with those measures, terms, and conditions. Additional project specific RPMs are provided in this incidental take statement that must also be applied.

PDFs incorporated into these projects are defined at Section 1.5.1 and in the respective Environmental Assessments and provide substantial risk reduction for project activities negatively affecting OC coho salmon. The NMFS considers these PDFs as integral parts of the proposed actions that will be applied to each activity in this consultation. In addition, the NMFS believes that the following reasonable and prudent measures are also necessary and appropriate to minimizing take of the above species.

Quartz Creek Bridge Repair

1. To minimize the amount and extent of incidental take from repair and reconstruction of the Quartz Creek bridge, measures shall be taken to limit the duration and extent of in-water work and to time the work to minimize impacts to OC coho.
2. To minimize the amount and extent of incidental take during the Quartz Creek bridge repair activities designed to remove the OC coho from the project area, water quality, methods, staff expertise, and removal success will be considered as described below in the terms and conditions.
3. To minimize the amount and extent of incidental take the coffer dam used for the Quartz Creek bridge repair will be built to minimize surface water flow through the project area.

4. To minimize the amount and extent of incidental take from Quartz Creek bridge repair, turbidity control measures must be employed to limit turbidity increases from any upwelling through interstitial gravel flow within the project area.
5. To minimize the amount and extent of take from loss of instream habitat and to minimize impacts to critical habitat from Quartz Creek bridge repair, measures shall be taken to minimize impacts to riparian and instream habitat, or where impacts are unavoidable, to replace or restore lost riparian and instream function.

Upper and Middle Smith River II Restoration and Rehabilitation

6. To minimize the amount and extent of take from hazardous materials used during Smith River restoration and rehabilitation projects, the BLM shall ensure project equipment operators have equipment and materials to control hazardous material spills.
7. To ensure effectiveness of implementation of the reasonable and prudent measures, all erosion control measures and plantings for Smith River restoration and rehabilitation projects shall be monitored and evaluated both during and following construction, and meet criteria as described below in the terms and conditions.

2.3 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, BLM and UNF must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. Implementation of the terms and conditions within this Opinion will further reduce the risk of impacts to fish and critical habitat. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure #1 (in-water work) above, the UNF shall ensure that:
 - a. Equipment operation within the stream shall be limited to the work area within the block nets.
 - b. Equipment will be removed from the active channel and parked in a staging area when not in use for the day.
 - c. Instream work within the bankfull area will not occur until after July 1 and end September 15.
 - d. Equipment refueling will occur outside of the stream's floodplain and in an area where spills can be contained.
2. To implement reasonable and prudent measure #2 (coho removal) above, the UNF shall ensure that:

- a. Qualified fish biologists are on site providing fish removal guidance.
 - b. Appropriate methodologies, including net mesh and design, are used to ensure young fish are not impinged or killed by the removal method or block nets. Mesh size must be small enough to ensure the nets do not gill the fish.
 - c. At a minimum, twice daily inspections (before operations and at the end of the day) of the block nets are conducted to ensure they are properly functioning and excluding fish.
 - d. Water quality is taken into account during project implementation to minimize risk to the fish; that is, this effort should not occur mid-afternoon when water temperatures are highest thereby increasing stress and potential for take.
3. To implement reasonable and prudent measure #3 (coffer dam construction) above, the UNF shall ensure that:
- a. Cofferdam construction is incorporated into any project plans or contracts.
 - b. Water diversion efficiency is sufficient to route the majority of surface water around the site and maintain state water quality standards downstream of the project.
 - c. Water diversion is maintained during the entire project.
4. To implement reasonable and prudent measure #4 (interstitial flow turbidity) above, the UNF shall ensure that:
- a. Appropriate turbidity control methods are used to prevent highly turbid water from leaving the work site due to the upflow of interstitial gravel flow.
 - b. A design and plan will be developed prior to project implementation.
 - c. The plan will be reviewed by the district fishery biologist or hydrologist.
5. To implement reasonable and prudent measure #5 (riparian habitat protection) above, the UNF shall ensure that:
- a. Riparian vegetation removal will be kept to the smallest area necessary to install the riprap.
 - b. Riparian vegetation removed will be replaced with a native seed mix, shrubs, and trees.
 - c. Riparian plantings will occur within the riprap structure in order to establish plants and roots below the top of the streambank. Riparian species such as vine maple will be used to reestablish streamside cover and shade.
 - d. Monitoring of riparian planting success will occur over a three year period and failed plantings will be replaced in-kind and in place or at a suitable location within the lower Quartz Creek site.

6. To implement reasonable and prudent measure #6 (hazardous materials) above, the BLM shall ensure that:
 - a. Each equipment operator or contractor will have hazardous material control equipment available (sorbent pads, booms).
 - b. Each contractor will have emergency spill notification procedures information on site (including the appropriate sections of the Roseburg District Hazardous Materials Emergency Response Contingency Plan).
 - c. Equipment will be refueled outside of the stream's floodplain and in a location that spills can be contained.
7. To implement reasonable and prudent measure #7 (monitoring) above, BLM shall ensure that:
 - a. Erosion control measures as presented in the PDFs shall be monitored.
 - b. All significant riparian replant areas will be monitored to ensure the plantings are performing correctly and have an acceptable success rate (success rate is dependent on erosion control effectiveness).

3. ESSENTIAL FISH HABITAT

Public Law 104-297, the Sustainable Fisheries Act of 1996, amended the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) to establish new requirements for *Essential Fish Habitat* (EFH) descriptions in Federal fishery management plans and to require Federal agencies to consult with NMFS on activities that may adversely affect EFH. EFH “means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (Magnuson-Stevens Act section 3). This definition includes those waters and substrate necessary to ensure the production needed to support a long-term sustainable fishery (*i.e.*, properly functioning habitat conditions necessary for the long-term survival of the species through the full range of environmental variation).

Section 305(b) of the Magnuson-Stevens Act (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NMFS shall provide conservation recommendations for any Federal or State activity that may adversely affect EFH;
- Federal agencies shall, within 30 days after receiving conservation recommendations from NMFS, provide a detailed response in writing to NMFS regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the

case of a response that is inconsistent with the conservation recommendations of NMFS, the Federal agency shall explain its reasons for not following the recommendations.

The Magnuson-Stevens Act does not distinguish between actions in EFH and actions outside of EFH, such as upstream and upslope activities that may have an adverse effect on EFH. Therefore, EFH consultation with NMFS is required by Federal agencies undertaking, permitting, or funding an activity that may adversely affect EFH, regardless of its location.

3.1 Identification of Essential Fish Habitat

The designated EFH for groundfish and coastal pelagic encompasses all waters from the mean high water line, and upriver extent of saltwater intrusion in river mouths, along the coasts of Washington, Oregon and California, seaward to the boundary of the U.S. exclusive economic zone (370.4 km)(PFMC 1998a, 1998b). In estuarine and marine areas, designated salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California north of Point Conception to the Canadian border (PFMC 1999).

Detailed descriptions and identifications of EFH for the groundfish species are found in the Final Environmental Assessment/Regulatory Impact Review for Amendment 11 to The Pacific Coast Groundfish Management Plan (PFMC 1998a) and the NMFS EFH for West Coast Groundfish Appendix (Casillas *et al.* 1998). Detailed descriptions and identifications of EFH for the coastal pelagic species are found in Amendment 8 to the Coastal Pelagic Species Fishery Management Plan (PFMC 1998b). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of the impacts to these species' EFH from the above proposed BLM and UNF actions is based on this information.

3.2 Effects of the Proposed Action

The proposed actions are detailed above, in section 1.2 of this Opinion. The proposed action areas (Upper South Umpqua and Upper Smith River watersheds) encompass the Council-designated EFH for chinook (*O. tshawytscha*) and coho salmon. The objective of this EFH consultation is to determine whether the proposed action may adversely affect EFH for the species listed above. Another objective of this EFH consultation is to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse impacts to EFH resulting from the proposed activities identified in Section 1.5.1 above.

Information submitted by the BLM and UNF is sufficient to conclude that the effects of this action on EFH are likely to be within the range of effects considered in the ESA portion of this consultation. Based on that analysis, NMFS finds that the proposed project would adversely affect EFH for coho and chinook salmon.

3.3 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Act, NMFS is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The BLM and UNF have incorporated conservation measures in their proposed actions of the potential effects to EFH in the proposed project design. The reasonable and prudent measures and the terms and conditions outlined above in section 2 are applicable to designated EFH. Therefore NMFS incorporates each of these measures here as EFH conservation recommendations.

3.4 Statutory Response Requirement

Please note that the Magnuson-Stevens Act (section 305(b)) and 50 CFR.920(j) requires the Federal agency to provide a written response to NMFS' EFH conservation recommendations within 30 days of its receipt of this letter. NMFS provided project specific conservation recommendations in section 2.2 and 2.3 of this document.

3.5 Consultation Renewal

The BLM and UNF must reinitiate EFH consultation with NMFS if plans for this action are substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR Part 600.920).

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